SUBSTITUTE SPECIFICATION

CLAIMS

1. A sensor (1,100) for capacitively measuring the distance to a stationary or passing object comprising an electrode (2, 102) for capacitively coupling with the object, a shield (105) that surrounds the electrode (102) and is electrically isolated from the electrode (102) by an insulating layer (104), and a housing (4, 106) that substantially surrounds the electrode (2, 102) and the shield (105),

wherein the electrode (2, 102) and the shield (105) are formed entirely from an electrically conductive ceramic material and the insulating layer (104) and the housing (4, 106) are formed entirely from an electrically non-conductive ceramic material, and in that the electrically conductive and electrically non-conductive ceramic materials are selected to have substantially similar thermal expansion coefficients.

2. A sensor according to claim 1, wherein the shield (105) is formed from a solid piece of electrically conductive ceramic.

3. A sensor according to claim 1, wherein the shield (105a) is a deposited electrically conductive ceramic layer.

4. A sensor according to claim 3, wherein the shield (105a) is deposited onto the inside surface of the housing (4, 106).

5. A sensor according to claim 1, further comprising:

a first electrically conductive bridge (5) connected to the electrode (2) and connectable to the conductor of a transmission cable; and

a second electrically conductive bridge (7) connected to the housing (4) and connectable to the conductor of a transmission cable.

6. A sensor according to claim 5, wherein the first electrically conductive bridge (5) passes through apertures provided in the housing (4) and the second electrically conductive bridge (7).

7. A sensor according to claim 5, wherein the second electrically conductive bridge (7) substantially surrounds the housing (4).

8. A sensor according to claim 6, wherein the second electrically conductive bridge (7) substantially surrounds the housing (4).

9. A sensor according to claim 5, further comprising an adaptor (30, 40) for connecting the second electrically conductive bridge (7) to the conductor of a transmission cable.

10. A sensor according to claim 5, further comprising a third electrically conductive bridge (109) connected to the shield (105) and connectable to the conductor of a transmission cable.

11. A sensor according to claim 10, wherein the first electrically conductive bridge (107) passes through apertures provided in the insulating layer (104), the shield (105), the third electrically conductive bridge (109), the housing (106) and the second electrically conductive bridge (111), and wherein the third electrically conductive bridge (109) passes through apertures provided in the housing (106) and the second electrically conductive bridge (111).

12. A sensor according to claim 10, further comprising an adaptor (60,70) for connecting the second electrically conductive bridge (111) to the conductor of a transmission cable and the third electrically conductive bridge (109) to the conductor of a transmission cable.

13. A sensor according to claim 11, further comprising an adaptor (60,70) for connecting the second electrically conductive bridge (111) to the conductor of a transmission cable and the third electrically conductive bridge (109) to the conductor of a transmission cable.

14. A sensor according to claim 1, wherein one or more of the electrode (102), shield (105), insulating layer (104) and housing (106) are bonded together.

15. A sensor according to claim 14, wherein the bonding provides a hermetic seal between the one or more of the electrode (102), shield (105), insulating layer (104) and housing (106).